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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,259	12/04/2003	David S. Keppel	2878	7800

50855 7590 12/07/2006

UNITED STATES SURGICAL,  
A DIVISION OF TYCO HEALTHCARE GROUP LP  
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EXAMINER

PEFFLEY, MICHAEL F

ART UNIT PAPER NUMBER

3739

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/728,259

Applicant(s)

KEPPEL, DAVID S.

Examiner

Michael Peffley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/6/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 3, 2006 has been entered.

***Claim Rejections - 35 USC § 103***

Claims 1-3, 5-12 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gines (6,033,399) in view of the teaching of Belt et al (4,191,188).

Gines discloses an electrosurgical generator that changes the output power of the generator based on sensed impedance (last line of the Abstract). In particular, impedance is measured using the output voltage and the output current of the waveform (see col. 9, lines 60-65) by a processing unit (12) which sends a signal to the waveform generator (12) to control the waveform being sent to tissue. It is noted that Gines disclose changing output power by changing the output voltage, and changing output voltage would inherently change the crest factor of the waveform. Hence, Gines is changing the output crest factor and output power based on the control signal from the impedance measurement processor. Gines specifically go on to state that the output power may be changed by changing the duty cycle or the crest factor of the output signal (col. 6, lines 40-50). The microprocessor (12) is deemed to be a data structure that includes data for setting the output power (or ceasing output power) based on

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measured impedance. The controller takes data samples in real time to determine tissue impedance and immediately send a control signal to change the output of the generator.

Gines teach that the output power may be controlled by altering either the duty cycle or the crest factor, but fails to specifically disclose altering the duty cycle to adjust the crest factor. Gines also fail to disclose the specific formulas for determining the output crest factor based on duty cycle.

Belt et al disclose a system that alters the crest factor and output power by changing the duty cycle. The examiner maintains that any reasonable formula for arriving at the crest factor using an algorithm involving the duty cycle would be within the purview of the skilled artisan. It is noted that applicant's specification fails to provide any particular criticality or unexpected result associated with the formula set forth in claims 5 and 14. Belt et al also disclose a means to manually adjust the crest factor of the system (see col. 5, lines 29-36).

To have provided the Gines system with a control means to alter the duty cycle of the feedback system to control the output crest factor and output power would have been an obvious consideration for one of ordinary skill in the art since Belt et al teach that it is known to control output crest factor and power by varying the duty cycle. To have further provided any reasonable formula for arriving at the crest factor based on the duty cycle of the generator would have been an obvious consideration for one of ordinary skill in the art in view of the teaching of Belt et al. To have further provide a

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manual control to set the crest factor would have been an obvious modification in view of the teaching of Belt et al.

***Claim Rejections - 35 USC § 103***

Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gines ('399) and Belt et al ('188) in view of the teaching of Carder (4,961,047).

The Gines system has been previously addressed. Gines specifically teaches of altering the output power of a generator based on sensed impedance, but fails to specifically teach using a look-up table as the means to correspond a measured impedance value with a generator output power. Gines also fail to disclose the specific formulas for determining the output crest factor based on duty cycle, although Gines does teach that the crest factor may be controlled by changing the duty cycle.

Carder discloses an electrosurgical generator that measures impedance and controls the output power of the generator in response to these measurements. In particular, Carder teach that it is known to use a look-up table associated with a processor to determine measure impedance based on sensed current and voltage, and to further use a look up table to determine a corresponding power output based on the impedance (see Abstract). To have employed a look-up table in the Gines microprocessor for assigning output values to measured impedances would have been an obvious consideration for one of ordinary skill in the art since Carder teaches that it is generally known to determine power outputs using look-up tables.

***Response to Arguments***

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Applicant has argued on pages 8 and 9 of the response that Gines teaches that the crest factor or the duty cycle may be changed to adjust output power, but fails to teach altering the duty cycle to adjust the crest factor as now set forth in the claims. The examiner maintains that the above cited Belt et al reference fairly teaches that it is known in the electrosurgical generator art to adjust duty cycle as a means to control the output crest factor and power of a system. As such, the examiner maintains that use of a control mechanism in the Gines system would be an obvious means to control the output of the system.

Applicant has also argued on page 11 of the response that there is no suggestion for combining the Belt teaching with the Gines reference since Belt fails to disclose an impedance feedback mechanism. The examiner disagrees. Gines clearly teach the impedance feedback system as well as the means to control power output by changing duty cycle or crest factor. Gines simply fails to explicitly acknowledge the adjustment of the crest factor by changing the duty cycle. The fact that Gines disclose adjusting the duty cycle would suggest that the crest factor is inherently also affected. However, the Belt et al reference is now cited to show that it is known in the art to adjust crest factor, and output power, by adjusting the duty cycle. Gines already provide the teaching of adjusting the output in response to the impedance measurements, and Belt et al is cited merely to show that it is known in the art to control output crest factor and power

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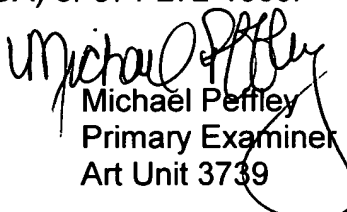
through adjustment of the duty cycle. One of ordinary skill in the art would obviously know how to employ the use of such a duty cycle adjustment in the Gines system (which does control duty cycle) to control the output crest factor and power.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Peffley whose telephone number is (571) 272-4770. The examiner can normally be reached on Mon-Fri from 6am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Michael Peffley  
Primary Examiner  
Art Unit 3739

mp  
December 4, 2006